

REMARKS

Claims 1-17, 19, 21-32, 34, and 36-41 are currently pending in the application. Claims 1-17, 19, 21-32, 34, and 36-41 were rejected. Claims 1, 23, and 36-41 have been amended.

The Examiner rejected claims 39-41 under 35 U.S.C. 101 as not being patentable subject matter because “it does not produce a useful, concrete and tangible result.” The rejection is respectfully traversed.

The utility, concreteness, and tangibility of the result of the method recited in claim 39 are indisputable. That is, the recited method results in a computer system in which the plurality of resources of which the system is comprised are configured into a plurality of partitions. The usefulness of such a result is well known in the art, and is the subject of a great many patents. For example, as described in the present application, such partitions enable a computer system to operate as multiple, independent systems (e.g., to handle different tasks in parallel), or, in the case of dynamic partitioning, to recover from run-time failures. Such a result is therefore clearly useful. In addition, such a result is both tangible and concrete in that it is not abstract, and is repeatable. That is, a computer system configured as claimed will behave predictably, and is a “practical method...of producing a beneficial result or effect.” See MPEP section 2106, IV, C, 2, (2), a) through c). In view of the foregoing, the rejection of claims 39-41 under 35 U.S.C. 101 should be withdrawn.

The Examiner rejected claims 36-41 under 35 U.S.C. 112, second paragraph, as being indefinite. In particular, the Examiner referred to the use of the term “enabling” in this claims as indefinite. The Applicants believe the claim term to be sufficiently clear in that one of ordinary skill in the art would understand that “enabling” a link in a point-to-point transmission infrastructure means to make that link operable, i.e., able to be employed to transmit data. Nevertheless, a clarifying amendment has been proposed herein which the Applicants believe should address the Examiner’s concern. In particular, these claims have been amended to recite

“enabling operation of” the links. As this amendment is being proposed for clarification purposes, it has not been made for any reason related to patentability.

The Examiner rejected claims 1-4, 6-10, 12, 13, 16, 21, 23-26, 28, 31, 36-37, 39, and 40 under 35 U.S.C. 103(a) as being unpatentable over what the Examiner has referred to as Applicant’s admitted prior art (AAPA) in view of U.S. Patent No. 5,303,383 (Neches). The Examiner also rejected claims 1, 15, 23, 30, 36, and 39 over AAPA and Neches in view of U.S. Patent No. 6,961,761 (Masuyama). The Examiner also rejected claims 1, 5, 11, 19, 22, 23, 27, 34, 36, 38, 39 and 41 over AAPA and Neches in view of U.S. Patent Publication No. US 2001/0037435 A1 (Van Doren). The Examiner also rejected claims 1, 14, 17, 23, 29, 32, 36, and 39 over AAPA and Neches in view of U.S. Patent No. 6,188,759 (Lorenzen). The rejections are respectfully traversed.

Neches describes a multistage interconnect network (MIN) for interconnecting processors modules (PM). See Abstract and FIG. 2. It is clear from the figures and the description that network 14 is a switch fabric which provides multiple, redundant, and dynamically configurable paths between each PM 12 and any other PM 12. See, for example, column 7, lines 10-27. This is clearly distinguishable from the “point-to-point transmission infrastructure” which includes “links” between processors described and claimed in the present application. That is, Neches’ multistage interconnect network is very similar to the hierarchical switch fabric described in Van Doren and is therefore distinguishable for at least the reasons Van Doren is not applicable here.

The references in Neches to “point-to-point” communication are clearly references to higher level communications among processors and refer to logical connections between processor modules rather than dedicated physical links as described and claimed in the present application. That is, as used in Neches, the term “point-to-point” refers to a communication protocol rather than the transmission infrastructure which, instead of being a point-to-point transmission infrastructure, is a hierarchical switch fabric similar to Van Doren’s. See, for

example, column 6, lines 26-51, and column 7.

Similarly, references in Neches to partitioning relate to the logical grouping of processor modules which result in groups of processor modules which communicate independently of each other via the same shared resource, i.e., the MIN. See, for example, column 35, line 40 et seq. That is, while communications between different “superclusters” of processor modules do not interfere, they must continue to use the same physical transmission infrastructure. Thus, it is impossible for the technique described in Neches to result in a partitioning schema in which “the portion of the point-to-point transmission infrastructure in each partition [is] distinct from and non-overlapping with the portion of the point-to-point transmission infrastructure in each other partition.” To the contrary, the transmission infrastructure in Neches’ partitions *must* be overlapping.

In addition, the Examiner’s combination of Neches with the description from the Background of the Invention fails for reasons similar to those articulated in previous responses with regard to the similar combination with Van Doren. That is, not only is the motivation to combine lacking, but the multistage interconnect network (MIN) of Neches is not compatible with the system described with reference to Fig. 2 of the present application. That is, Neches’ MIN is operable to directly route packets from every one of the input ports to every one of the output ports (see FIGs. 1 and 2 and the corresponding description). It is clear that in order for Neches’ system to operate, the MIN must operate as an undivided, shared resource among the processor modules. Thus, there is no way to partition the MIN in the manner claimed in the present application and have it remain operable.

By contrast, the point-to-point communication links of the system described in the Background of the Invention of the present application are *dedicated* links between the processing nodes which, in some cases, makes it necessary for indirect transmissions between two processing nodes (i.e., via an intermediate processing node).

Because Neches' MIN is an indivisible switch fabric which directly connects any one of the connected processor modules to any other one of the processor modules, the partitioning technique described in Neches would have to be significantly altered to be operable in the kind of point-to-point infrastructure described in the present application with reference to Fig. 2. Neches does not contain any teachings as to how this might be accomplished, or even any suggestions that such a result would be desirable. Therefore, because the technique taught by the Neches reference is not compatible in its disclosed form with the system shown in Fig. 2 of the present application, the references may not be properly combined. In view of the foregoing, all of the rejections referring to Neches should be withdrawn.

Notwithstanding the foregoing, amendments have been proposed herein for clarification purposes to make it clear that the claimed transmission infrastructure comprises "dedicated physical" links between processors. This should serve to clear up any confusion relating to the references in Neches to logical "point-to-point" communications. And because these amendments are being proposed for clarification purposes only, they are not being made for any reason related to patentability.

In view of the foregoing, the rejection of claims 1, 23, 36, and 39 over AAPA and Neches is believed overcome. The rejection of any dependent claims based on this combination is also believed overcome for at least the reasons discussed.

As described in the previous response (the arguments of which are incorporated herein by reference) and in view of the foregoing discussion, the introduction of Masuyama does not cure the deficiencies of the cited art. That is, Masuyama's interconnect is an indivisible, shared interconnect by which the various nodes in the system communicate. Thus, as with the switch fabric of Van Doren and the MIN of Neches, the interconnect of Masuyama cannot enable the partitioning of its system into "a plurality of partitions" in which the portion of the point-to-point transmission infrastructure in each partition is "distinct from and non-overlapping with the

portion of the point-to-point transmission infrastructure in each other partition.”

And as discussed in previous responses, and as made clear by the foregoing discussion, the addition of the Van Doren reference to the combination of AAPA and Neches continues to fall short of what is required to anticipate or obviate the claimed invention.

With regard to the Examiner’s use of Lorenzen, the Applicants refer to arguments presented in previous responses (incorporated herein by reference) relating to the fact that this reference is not relevant to the claimed invention.

In view of the fact that none of the art of record teaches the partitioning techniques recited in the claims of the present application, Applicants believe all claims now pending in this application are in condition for allowance. The issuance of a formal Notice of Allowance at an early date is respectfully requested. If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at (510) 663-1100.

Respectfully submitted,
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